

IN THE CLAIMS:

The following listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Canceled)

2. (Currently Amended) A system for performing a simulation, the system comprising:

one or more processors;

memory storing program instructions; and

an input device;

wherein the program instructions are executable by the one or more processors to:

turn a simulation mode either on or off in response to user input;

receive a request for input from a measurement/control program;

determine whether the simulation mode is turned on or off; and

selectively route the request for input to either a simulation program or the input device, depending on whether the simulation mode is turned on or off, wherein selectively routing the request for input comprises:

routing the request for input to [[a]] the simulation program if the simulation mode is turned on;

routing the request for input to the input device if the simulation mode is turned off.

3. (Previously Presented) The system of claim 2,

wherein the measurement/control program performs the request for input identically, regardless of whether the simulation mode is turned on or off.

4. (Currently Amended) The system of claim 2, further comprising:
an output device;
wherein the program instructions are further executable by the one or more processors to:
receive a request for output from the measurement/control program; and
selectively route the request for output to either the simulation program or the output device, depending on whether the simulation mode is turned on or off, wherein selectively routing the request for output comprises:
routing the request for output to the simulation program if the simulation mode is turned on;
routing the request for output to the output device if the simulation mode is turned off.

5. (Previously Presented) The system of claim 2,
wherein after determining that the simulation mode is turned on and routing the request for input to the simulation program, the program instructions are further executable by the one or more processors to:
receive results for the input request from the simulation program; and
pass the results received from the simulation program to the measurement/control program.

6. (Previously Presented) The system of claim 2,
wherein the request for input comprises a request for input through a first I/O channel;

wherein the program instructions are further executable by the one or more processors to determine that the first I/O channel is mapped to a first software routine of the simulation program;

wherein said routing the request for input to the simulation program comprises routing the request for input to the first software routine of the simulation program.

7. (Previously Presented) The system of claim 2,

wherein the program instructions are further executable by the one or more processors to map the first I/O channel to the first software routine of the simulation program in response to user input requesting the first I/O channel to be mapped to the first software routine of the simulation program.

8. (Canceled)

9. (Previously Presented) The system of claim 2,

wherein turning the simulation mode either on and off comprises turning the simulation mode either on or off without requiring the measurement/control program to be modified, wherein the measurement/control program operates correctly, regardless of whether the simulation mode is turned on or off.

10. (Previously Presented) The system of claim 2,

wherein the measurement/control program is stored in the memory and executed by the one or more processors.

11. (Previously Presented) The system of claim 10,

wherein the simulation program is also stored in the memory and executed by the one or more processors.

12. (Previously Presented) The system of claim 10,
wherein the one or more processors are one or more processors of a first computer system included in the system;
wherein the system further includes a second computer system coupled to the first computer system;
wherein the simulation program executes on the second computer system.

13. (Previously Presented) The system of claim 2,
wherein the simulation program executes to simulate a physical system.

14. (Previously Presented) The system of claim 2,
wherein the simulation program executes to simulate operation of a device.

15. (Previously Presented) The system of claim 2,
wherein the measurement/control program comprises a graphical program,
wherein the graphical program comprises a plurality of interconnected nodes that visually indicate functionality of the graphical program.

16. (Previously Presented) The system of claim 2,
wherein the simulation program comprises a graphical program, wherein the graphical program comprises a plurality of interconnected nodes that visually indicate functionality of the graphical program.

17. (Currently Amended) A method for performing a simulation, the method comprising:

- turning a simulation mode either on or off in response to user input;
- executing a measurement/control program;
- executing a simulation program, wherein the simulation program executes to simulate a system;
- receiving a request for input from the measurement/control program;
- determining whether the simulation mode is turned on or off; and
- selectively routing the request for input to either the simulation program or an input device, depending on whether the simulation mode is turned on or off, wherein selectively routing the request for input comprises:

- routing the request for input to the simulation program if the simulation mode is turned on;

- routing the request for input to ~~[[an]]~~ the input device if the simulation mode is turned off.

18. (Currently Amended) A tangible computer-readable memory medium storing program instructions for performing a simulation, wherein the program instructions are executable to:

- turn a simulation mode either on or off in response to user input;
- receive a request for input from a measurement/control program;
- determine whether the simulation mode is turned on or off; and
- selectively route the request for input to either a simulation program or an input device, depending on whether the simulation mode is turned on or off, wherein selectively routing the request for input comprises:

routing the request for input to [[a]] the simulation program if the simulation mode is turned on;

routing the request for input to [[an]] the input device if the simulation mode is turned off.

19. (Currently Amended) The method of claim 17, further comprising:

receiving a request for output from the measurement/control program; and

selectively routing the request for output to either the simulation program or an output device, depending on whether the simulation mode is turned on or off, wherein selectively routing the request for output comprises:

routing the request for output to the simulation program if the simulation mode is turned on;

routing the request for output to the output device if the simulation mode is turned off.

20. (Currently Amended) The tangible computer-readable memory medium of claim 18, wherein the program instructions are further executable to:

receive a request for output from the measurement/control program; and

selectively route the request for output to either the simulation program or an output device, depending on whether the simulation mode is turned on or off, wherein selectively routing the request for output comprises:

routing the request for output to the simulation program if the simulation mode is turned on;

routing the request for output to the output device if the simulation mode is turned off.

21. (Previously Presented) The method of claim 17, further comprising:

after determining that the simulation mode is turned on and routing the request for input to the simulation program, receiving results for the input request from the simulation program, and passing the results received from the simulation program to the measurement/control program.

22. (Currently Amended) The tangible computer-readable memory medium of claim 18, wherein after determining that the simulation mode is turned on and routing the request for input to the simulation program, the program instructions are further executable to:

receive results for the input request from the simulation program; and

pass the results received from the simulation program to the measurement/control program.